DOCUMENT RESUME

ED 302 095 FL 017 739

AUTHOR Cheung, Anthony C. M.
TITLE Integrating CALL Software into ESL Curricula: An Exploration.
PUB DATE Aug 87
NOTE 14p.; Paper presented at the Annual Meeting of the International Association of Applied Linguistics (Sydney, New South Wales, Australia, August 16-21, 1987).
PUB TYPE Information Analyses (070) -- Reports - Evaluative/Feasibility (142) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; *Courseware; *Curriculum Development; *English (Second Language); Foreign Countries; Second Language Instruction; Teacher Role

ABSTRACT

The use of computer-assisted-language-learning (CALL) software in the curriculum for teaching English as a second language (ESL) is discussed. Selected CALL programs are described, and some general concerns about the application of CALL software are outlined, including the limited oral applications, inappropriate content or design, and the "non-communicative" orientation of many programs. Two recent experiments exploring the integration of CALL software into regular ESL curricula are described. One experiment involved a class of 16 ESL students in the use of multiple-choice authoring program, and the other had a group of ESL teachers in an in-service program use a reading program. Results suggest that many students find CALL interesting and exciting, and that the software is adaptable to language course themes and units. The approach is also seen to change the teacher's role from that of information-provider to that of organizer and tutor. A brief bibliography and sample data files from the experiments are appended. (MSE)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED302095

AILA 1987 SYDNEY

University of Sydney, NSW, Australia

16-21 August, 1987

A PAPER

on

Integrating CALL Software into ESL Curricula: an Exploration

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

A. Cheung

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

✓ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

FL017739

Anthony C. M. Cheung, MA, MEd, MIL, PH.D.

I. Introduction

Nowadays, the use of microcomputers in language education has become increasingly popular. Computer Aided Language Learning (CALL) activities are receiving much attention from language educationists. Many have written on the topic and suggested that the microcomputer should best adopt the role of a tool. They include Davies (1982), (1983), Harrison (1983), Higgins and Johns (1984), Cheung (1986), Olds (1986) and many others.

This paper briefly introduces a range of selected CALL software. It then raises several general concerns relating to their application. Some solutions will be suggested. Subsequently, two recent experiments which aimed at exploring the possibility of integrating CALL software into regular ESL curricula will be reported. In the conclusion, experience gained from the experiments will be drawn together.

II. A Description of Selected CALL Software

Over the past few years, a range of software has been developed for CALL. In this first part of this paper, we shall introduce some of these and examine how they work in general. They include the following:

1. ANAGRAMS
2. DECODER
3. FLASHPHRASES
4. MULTIPLE CHOICE
5. CLOZE
6. ARTICLES
7. AUXILIARIES
8. PREPOSITIONS
9. LETTERBOARD
10. SCRAMBLED TEXT
11. SEQUENCER

"ANAGRAMS" is a program which takes words and rearranges the order of the letters. The user has to reconstruct the word. He is given clues where this proves difficult. Any number of wordlists can be used with this program. Its major use lies perhaps with vocabulary reinforcement.

"DECODER" is a program which takes a string and replaces all the letters by other letters. For example, an "a" may be replaced by a "t" and a "g" may be replaced by an "h". The user is required to process the modified string and reconstruct the original string by getting at the letters one at a time.

"FLASHPHRASES" is a program which makes use of the timed presentation of screen displays to give practice and reinforcement of items of vocabulary. It draws on a fairly large bank of words, dividing them into four levels of difficulty. The user starts at

the lowest level, and if he is able to re-type the words flashed on the screen within the limits set - he must not allow his score to fall below 80% - he automatically moves on to the next level, at which the display time is reduced, and the words increase in difficulty.

"MULTIPLE CHOICE" aims at providing practice on items of information. The program consists of twenty items. Each time when the program runs, it asks the user for a data file. After the data file is loaded, the program will randomly mix the items and present these one at a time in the mixed order. Following an initial cue, which can either take the form of a question or a statement, the key alongside with 3 distractors are given. The cue can take a maximum of 2 lines. Each line can take a maximum of 35 characters. Each of the possible answers take one line and a maximum of 30 characters. Everytime the key and the distractors appear, the program is able to mix their sequence randomly. In other words, the key may on one occasion appear in position A and may on another occasion, appear in position D. Everytime a user gets an answer right, the program responds with the word "RIGHT". If the user gets it wrong, the correct answer will be provided.

"CLOZE" is a program which removes words from a text at intervals chosen by the user. These intervals can range from five to twelve words. It replaces these words with blanks and asks the user to reconstruct the text.

"ARTICLES" is a program which removes articles from a text. It works in a similar manner as the "Cloze" program. It replaces the articles with blanks and asks the user to reconstruct the text.

"AUXILIARIES" is a program which removes auxiliaries from a text. It works in a similar manner as the "Cloze" program. It replaces the auxiliaries with blanks and asks the user to reconstruct the text.

"PREPOSITIONS" is a program which removes pre-specified prepositions from a text. It works in a similar manner as the "Cloze" program. It replaces the prepositions with blanks and asks the user to reconstruct the text.

"LETTERBOARD" is a program which allows a text to be reconstructed by displaying all the instances of a given letter in the order chosen by the user - one "game" is to discover the minimum number of different letters required for the text to become comprehensible.

"SCRAMBLED TEXT" is a program which rearranges the order of both lines and columns of text and asks the user to reconstruct the original text.

"SEQUENCER" is basically a reading program. Its conceptualisation was derived from "the Reading for Learning Project" by Lunzer and Gardner on the psycholinguistics of reading. It takes data files which consist of 10 strings. Each of these strings can have a maximum length of 76 characters. The program first asks the user for a data file. After the data is loaded, it will then randomly mix the sequence of the strings. Following the randomisation, two of the strings are displayed on the monitor. The user is prompted to make judgement about sentence order. When this is completed, the third string is presented. The learner is again asked to fit the new string into a correct sequence with the first two. He is free to modify the sequence anytime he chooses to. The program proceeds until it has finished presenting all the ten strings. When the learner has completed the exercise, the program performs two more functions. First, it will show the

learner how long he has taken to complete the exercise. Second, it will present a model answer. The learner will then be able to flick back and forth the frames which display his trial run and the model answer.

III. Some General Concerns Relating to the Application of CALL Software

To date, the computing power which comes readily available to the average language teacher is still rather restricted. For example, most microcomputers are not equipped with speech recognition facilities, neither are they capable of producing reasonable chunks of interactive speech. Davies (1982) writes,

> "Modern microcomputers are very sophisticated machines but they have their limitations. At the time of writing, it is well within the capability of a microcomputer to present visual stimuli .... it is still very difficult to program a computer, especially a microcomputer, to analyse the human voice with the kind of accuracy a language teacher requires." (pp. 8-9)

Even today, as far as the average language teacher is concerned, what Davies suggested in 1982 is still applicable. Because of this, most of the existing CALL software appear to have restricted functions. Ostensibly, they offer limited interaction with individual learners: there seems to be an over-emphasis on reading and writing, at the expense of oral and listening skills.

The above criticism is true if CALL programs are tackled by individual students. However, if small groups of learners are asked to work on the programs as teams, the picture can change drastically. Citing Davies (Ibid.) again,

> "The advantage of the computer is that it can easily be used for work in pairs or small groups. One student types while the others suggest possible answers and keep an eye open for errors. CALL does not necessarily imply isolation." (p.22)

Chandler (1983) also shares a similar view. He regards that "the use of computers can promote constructive discussion rather than inhibit it." (p.11) In small group settings, to arrive at various task solutions, learners usually communicate and discuss with each other. With the teacher's encouragement, this discussion can often be conducted in the target language. Hence, opportunities for communication and development of oral and listening skills are created.

A second concern relating to CALL program application is that many teachers often find the texts provided in the master programs unsuitable for their purposes: the texts may be too easy or too difficult. Furthermore, the style or the content may be inappropriate.

At this juncture, an essential point needs stressing is that all CALL programs should be regarded as dynamic entities. In other words, if one is unsatisfied with the manner that parts of a program run, or the text that a program uses, one could always modify, or even replace them. Usually, it is not an easy task for an average language teacher to actually get into a piece of software and modify the program lines, effecting changes in the master program. However, with the latter task, i.e., modifying or replacing the original text, it is relatively easy.

The majority of currently available CALL programs obtains textual data in one of the two following ways. Data may read from "data lines" which carry textual data. These lines are located within the same master program. Alternatively, data may be read from "data files" which can be regarded as extensions of the master program.

Below is an example of a data line. In the "DECODER" program we may have the following:

230 DATA Meet me at eight this evening B4 the front gate.

Data lines of this sort are easy to locate and modify. In BASIC, these lines always begin with a line number followed by a BASIC keyword "DATA". In the above example, if one wants to change the message, all one has to do is to type in the line number, i.e., 230; followed by the keyword "DATA" and then the new message, e.g., "Meet Jane at four this afternoon in the canteen". After the <RETURN> or <EXECUTE> key on the keyboard is pressed, in all likelihood, the old text will be replaced by the new one in the program.

With programs which draw data from data files, the user is usually required to provide the name of a data file. When the latter is named, textual data will then be read from the specified file and displayed accordingly. With some CALL packages, in addition to a master program and selected data files, there may be an authoring program which enables the user to create new data files.

For Davies (Op.cit.), the merits of authoring programs are that most of them "offer a menu of options which the user selects to set up the data. They do not require the user to learn a special programming language." (p.35) Davies sees these programs as the "simple answer" to "speedy software development" for "the teacher with no knowledge of programming who wishes to produce CALL material". (p.35)

If authoring programs are available, the task of modifying or replacing the original text is convenient. Teachers will then be able to create new texts which live up to their own standards.

A third major concern relating to CALL program application is a philosophical one. For example, a contemporary language teacher who believes in a communicative approach is likely to dismiss MULTIPLE CHOICE type programs as promoting "non-communicative" language learning activities. Clearly, these teachers will find this kind of programs difficult to accept, let alone considering them for integration into regular language courses.

Nevertheless, we see the majority of existing CALL programs as possessing a communicative potential. These include the MULTIPLE CHOICE type programs, which are normally regarded as "non-communicative". Applied properly and with imagination, they can promote communicative language learning activities. Moreover, with the help of authoring programs, new texts can be prepared for the programs in such a manner that they can be integrated into ESL courses. The "project approach" presented below is one way in which CALL software can be successfully applied. The presentation consists of two parts. The first part is a description of the approach. The second is a brief report on two recent experiments trialing out such an approach in the Hong Kong tertiary context. The first experiment used the MULTIPLE CHOICE program while the second one employed the SEQUENCER.

IV. The Project Approach

The approach consists of the following stages:

1. The input stage:
2. The organisation stage
3. The research stage
4. The tutorial stage
5. The application stage
6. The revision stage

At the input stage, a CALL program is presented to a class. The students are asked to familiarise themselves with it. This process includes learning about how the program works and how the language is presented. The students are also told that they will be asked to replace the text in the program with their own work at a later stage of the project.

At the organisation stage, the students are organised into small groups. Depending on the course design, it may be possible for the groups to choose their own topics freely. Alternatively, these topics can be made available by the teacher and the groups may either choose their topic from the list provided or the teacher may assign the groups with particular topics.

At the research stage, the groups are to resort to various reference materials to compile their assignment drafts.

The tutorial stage arrives when the drafts are completed. The teacher could have tutorials with individual groups. The drafts could then be checked and revised wherever necessary.

During the application stage, the groups will type in their work on the computer making use of related authoring programs. When this is completed, they can run the master program which now draws data from the newly created data files. The work of one group can also serve as new input for other groups.

Normally, the application stage is followed by a revision stage because there can be local constraints with individual CALL programs. On the basis of the experience gained from the application, the newly created data files can be edited and revised. If necessary, the revision may be extended to the master program. When the revision is completed, there can be a further application stage.

In fact, some of the stages can be recursive. These include the research, tutorial, application and revision stages. The amount of time to spend on a project is dependent on the course syllabus and the time a teacher and his students have at their disposal.

In the following Section, we shall provide an example on applying the project approach in the classroom reality. Through the example, we hope to illustrate two points. The first is the extent of student enthusiasm. The second is the flexibility and adaptability of CALL programs in ESL courses.

V. A MULTIPLE CHOICE Program Project

Recently, employing the project approach, an experiment was conducted with a Nautical class of sixteen students at the Hong Kong Polytechnic using the MULTIPLE CHOICE program.

In the first lesson, the program was introduced to the subjects. They were asked to learn the following:

1. the way the program worked in general;
2. the way the questions were asked;
3. the manner the key and the distractors were presented; and
4. the physical constraints of the program, e.g., the maximum number of characters a cue takes, the maximum number of lines it takes, etc.

The students were also informed that at a later part of the project, they would have to provide the program with new multiple choice items themselves.

Towards the end of the lesson, the class was organised into four small groups, each consisted of four students. Two topics were chosen by the groups. One was shipping knowledge and the other was medical terminology.

After this, the groups consulted their reference books and each compiled a draft of twenty items. When the draft was ready, they then had tutorials with their teacher. The teacher went over the draft with them and suggested modifications where necessary. The research and tutorial stages took two lessons.

In the fourth lesson, the final drafts were ready. The groups then fed their work into the microcomputer. In this instance, the new text data were stored in the form of small VIEW (wordprocessor) files. Please see Appendix A for samples of this. As the students were already quite competent in their wordprocessing, the typing in of new text was a relatively simple exercise. In less than thirty minutes, all the groups had completed entering the data and were doing trial runs using the master MULTIPLE CHOICE program with their new data files.

There were various local constraints with the master program which the students were not aware of in the first place. For instance, with the two lines reserved for the cue, there was no automatic "word-wrap" function. So in some of the cues, a word which occurred at the end of the first line may "overflow" into the second. Moreover, typing errors in the data files were exceptionally transparent when they appeared in the master program. It did not take long for the students to realise this sort of errors. Without a single prompt from the teacher, the students spontaneously began to edit their data files. All the groups persevered in doing so enthusiastically until they had convinced themselves that they had sorted out every single "bug" in their files.

VI. Some Comments on the MULTIPLE CHOICE Program Project

This Section describes some of the experience gained from the above experiment.

First, the microcomputer and the CALL software generated considerable interest among the students. Throughout, they were enthusiastic and highly motivated. It was a rather uncommon but pleasant experience to witness them making painstaking efforts in the revision stage endeavouring to upgrade their work to perfection level. When the lesson was over, groups which were still unable to complete their editing stayed behind voluntarily to finish their task. The factor at work here was possibly a sense of achievement. On successful completion of the exercise, the students could pride themselves as having done not only a useful exercise, but also participated actively in creating a "new" computer program!

Second, the interaction throughout the experiment was at all levels. There were ample opportunities for the students to practise the four skills in the target language, both among themselves and with the teacher.

Third, a habit of consulting reference books was cultivated.

Fourth, the new textual data could have high relevance with given themes in language courses.

Fifth, the microcomputer served as an essential tool throughout. Its major function was to hinge students' interests together. Nevertheless, it did not dominate the scene entirely. For example, at the organisation, research and tutorial stages, there was little need to resort to the micro.

Last, the approach has an implication on the role of the language teacher. It calls for a shift in the traditional role of the language teacher as an information provider. Instead, he is now an organiser of learning activities and a tutor who provides guidance whenever required.

VII. A SEQUENCER Project

The experiment using the SEQUENCER involved a group of in-service English language teachers. They came from various Hong Kong secondary schools and participated in an introductory course to CALL. The procedure of this experiment was similar to that of the MULTIPLE CHOICE project. The only difference was that the whole project was completed in a morning session which lasted three hours. For obvious reasons, the time spent on the research stage was minimal. Appendix B provides samples of SEQUENCER data files produced by the teachers.

The interest generated was again considerable. Through inputting new textual data themselves, many teachers reported that they realised and appreciated that the project approach provided an additional dimension to exploit CALL software. Some even said that they would try this out on their own students.

VIII. Conclusions

In this paper, we have introduced selected CALL programs. Some general concerns about these programs have been raised and solutions were suggested. Relating to the difficulty in integrating CALL software into ESL curricula, a project approach was presented as an answer. Further, a brief report on recent experiments of applying the approach in the Hong Kong tertiary context was provided.

The findings of the experiments indicate that many students find CALL work interesting and exciting. When the project approach is applied, opportunities for practising all the four skills are created. Further, the assignments can be tailored to fit related themes and units of language courses. The microcomputer and CALL software can best be regarded as new tools available to language teachers. They can serve the function of hinging students' interests together. There is also the implication on the shift of the conventional role of a language teacher from one of an information provider to that of an organiser and tutor.

Furthermore, the SEQUENCER experiment demonstrates that the project approach works. In other words, it is feasible to apply the approach across the whole range of currently available CALL software.

In the above experiments, it is the teacher who played a key role throughout. On the other hand, the microcomputer served another vital function but it is no substitute for the teacher. Stewart (1983) is correct in maintaining that the "computer will never replace the good teacher - and indeed may well require one for proper use." (p.74)

Finally, Davies' (Op.cit.) words serve well as a concluding remark:

> "Under no circumstances should the computer be regarded .... as the panacea. The eclectic approach is undoubtedly the best, and the computer should only be employed where it is appropriate." (pp. 3-4)

==========

Bibliography

CHANDLER, D.C., *Exploring English with Microcomputers*, Council of Educational Technology, 1983

CHEUNG, A.C.M., "Computer Networks and Language Education", Paper presented at 2nd ILE International Seminar, Hong Kong 15-17 December, 1986.

DAVIES, G., *Computers, Language and Language Learning*, Centre for Information on Language Teaching and Research, 1982.

HARRISON, C., "English teaching and computer assisted simulations" in *Exploring English with Microcomputers*, (ed.) Chandler D.C., Council of Educational Technology, 1983.

HIGGINS, J. & JOHNS, T., *Computers in Language Learning*, London: Collins ELT, 1984.

OLDS, H.F., "Computing tools in education: through the curriculum and beyond" in *Proceedings of 4th Annual Conference of NSW Computer Education Group*, (ed.) Frederick, B., Computer Education Group of NSW Ltd., 1986.

STEWART, J., "Does the use of the microcomputer inhibit the development of language in children?" in *Exploring English with Microcomputers*, (ed.) Chandler D.C., Council of Educational Technology, 1983.

APPENDIX A

M.C. SAMPLE DATA FILES - Shipping Knowledge

SPK001 *The flag erecting at the *back of a ship represents its: *country of origin *company *destination country *owner's nationality *

SPK002 *At the Ocean Terminal, a passenger *ship moors along the terminal's: *port side *starboard side *stern *stem *

SPK003 *A _____ lamp is placed on the*left of the bridge. *red *white *green *yellow *

SPK004 *When a ship moves directly at *you, you should: *turn left *go ahead *turn right *halt *

SPK005 *When a ship is abandoned, *the radio officer should follow the: *master *chief officer *chief engineer *chief steward *

SPK006 *EPIRB is a: * *location indicator *radar *electronic pilot *fire extinguisher *

SPK007 *The direction on either side of *a boat is: *abeam *astern *ahead *aside *

SPK008 *A _____ is used to control *the rudder *tiller *centreboard *strap *jib *

SPK009 *The act of sailing when *the wind is blowing from the side: *reaching *running *going *sending *

SPK010 *A rope may be temporarily *shortened by a: *sheepshank *sheetbend *slippery hitch *bowline *

SPK011 *A hand-held electric light * used for sending signals at sea: *aldis lamp *carbon lamp *gas lamp *mercury lamp *

SPK012 *The common naval term for *rowing is: *pull *puch *sail *drive *

SPK013 *The body of a ship is *known as its: *hull *boom *hill *luff *

SPK014 *A ring of metal through which a *line may be led is: *bee *ant *becket *bell *

SPK015 *The portion of a ship under *sea-level is called: *draught *propeller *poop *freeing port *

SPK016 *The person who is the overall *in charge of a ship is the: *master *chief officer *chief steward *radio officer *

SPK017 *The side of a boat away from the *wind is: *leeward *windward *outward *inward *

SPK018 *The part for balancing *a ship is its: *rudder *propeller *pillar *bulkmark *

SPK019 *The nautical word used to *attract attention is: *ahoy *ahull *alee *alert *

SPK020 *The fore part of a ship is * known as its: *bow *hull *stern *quarter *

M.C. SAMPLE DATA FILES - Medical Terminology

MEDB001 *The first "A" in "ACEPHALOUS" means: * *not *in *one *insufficient *

MEDB002 *"PHONO-" in "PHONOCARDIOGRAM" means: * *voice *unreal *telephone *record *

MEDB003 *"-CHONDRO-" in "ACHONDROPLASIA" *means: *cartilage *chloride *choline *tooth *

MEDB004 *"HYPOSMIA" means decrease in the *sensitivity of: *smell *taste *touch *hearing *

MEDB005 *"-PENIA" in "FIBRINOGENOPENIA" means: * *poverty *property *disease *one *

MEDB006 *"-OMA" in "FIBROSARCOMA" means: * *tumour *flesh *tissue *malignant *

MEDB007 *"PNEUMO-" in "PNEUMONITIS" means: * *lung *brain *skull *liver *

MEDB008 *"DIAPHORESIS" means: * *perspiration *inspiration *respiration *expiration *

MEDB009 *"-MALACIA" in "CHONDROMALACIA" means: * *softening *exchanging *deficiency *removing *

MEDB010 *"PATHO-" in "PATHOLOGY" means: * *disease *heart *changes *lung *

MEDB011 *"-CARDIO-" in "PHONOCARDIOGRAM" *means: *heart *brain *liver *lung *

MEDB012 *"-ARTHRO-" in "PSEUDOARTHROSIS" *means: *joint *kidney *mouth *tooth *

MEDB013 *In human beings, the excess energy *from food is for: *maintaining body temperature *curing disease *growth *overcoming problems *

MEDB014 *In training we must first enable the *body muscles to tolerate: *lactic acid *glucose *alcohol *carbon dioxide *

MEDB015 *Which is needed by the thyroid gland *located at the base of the neck? *iodine *calcium *phosphorus *magnesium *

MEDB016 *Which is in the stomach to help *food digestion? *gastric juice *sulphuric acid *maltase *enterokinase *

MEDB017 *Which protects the teeth from *dental decay? *enamel *calcium *dentine *magnesium *

MEDB018 *Muscles are joined to bones by: * *tendons *nerves *blood vessels *membrane *

MEDB019 *"CHONDROMALACIA" means: * *softening of cartilage *malignant neoplasm of cartilage *benign tumour of cartilage *dissolution of cartilage *

MEDB020 *"RHINOLOGY" is the study of disease *affecting the: *nose *ear *mouth *muscle *

APPENDIX B

SEQUENCER SAMPLE DATA FILES

Mary Comes Home

Mary arrived home at 8. She had been working all day and felt tired. She opened the front door and walked into the dining room. It was empty but the radio was on. She switched it off. Some newspapers were lying on the floor. She picked them up and put them on a table. She walked into the kitchen. There was no one there either. But Suzy, the cat, lay sleeping in the corner by the stove.

Seals

If you are a seal, fat is beautiful. After a baby seal is born, it is fed for only three or four weeks. The milk of the mother seal contains fifty per cent fat. This provides a good foundation for the young animal. Later on, the baby seal eats fish and other small animals. Each seal has a thin layer of fat under its skin. This is called "blubber". This layer of blubber keeps the seal warm, and helps it to float on water. It is also a reserve for food for times when such is scarce. Seals live mostly in the Arctic and the Antarctic, where it is very cold.

My Broken Ankle

Last year, I went with some friends to Happy Valley for a football match.
I broke my ankle in the match and had to be taken to hospital.
I couldn't walk, so my friends had to send for an ambulance.
The doctors were busy when I got there and I had to wait.
My ankle was very painful and two nurses helped me onto a bed.
Finally, a doctor was free and he came to attend to me.
He decided to operate on my ankle and gave me an anaesthetic.
My ankle was encased in plaster of Paris and I wasn't allowed to move.
I couldn't walk properly for some time and had to use crutches.
My ankle was always weak after that and I couldn't play football again.